REMARKS

Claims 10-24 are all the claims pending in the application. Claims 1-9 have been canceled and new claims 10-24 have been added based on, for example, the original claims 1-9.

The specification has been amended to correct the spelling of "strenght" to "strength" on line 10, page 1 of the specification.

Entry of the above amendments is respectfully requested.

I. Rejection of Claims 1-9 under 35 U.S.C. § 103(a)

Claims 1-9 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Bangaru et al. (US 6,228,183).

Applicants respectfully traverse the rejection.

Initially, the new claims more clearly recite two forging processes: cold and hot. The present invention relates to the production of mechanical components by forging, *i.e.* plastic transformation, of long steel products such as wire or rods. The mechanical components may *e.g.,* be wheel swivel joints of terrestrial vehicles, pins, shafts, suspension bars, links, or other ready-for-use analogous mechanical components of relatively elaborated shapes and requiring elevated characteristics.

It is known that steels for plastic deformation must exhibit characteristics of both deformability and strength. Thus, during the manufacture of mechanical components for which some of them are intended, they have to be able to endure major changes in shape without rupture, and at the same time exhibit good mechanical properties in the finished product.

The present invention aims at providing low-carbon steel with such characteristics.

An object of the present invention is to provide steel transformers with long low carbon steel products that are capable of developing a bainitic or essentially bainitic structure with few

constraints regarding cooling, for the manufacture of ready-for-use components by both cold forging (stamping) and hot forging.

A further object of the present invention is to provide low carbon steel specifically for the manufacture of mechanical components possessing a bainitic or essentially bainitic structure, which can be already obtained with low cooling rates at the core (*e.g.*, as low as 1°C/s), and offering not only good deformation properties, but also a good machinability for the manufacture of components by cold or hot deformation, without additional heat treatment after forming, said grade having high mechanical properties such that said components will meet the quality requirements of Classes 8.8 to 12.9 of ISO specification 898.

These objectives are met by the ready-for-use forged low-carbon steel mechanical component of new claims 10 and 14, the processes of new claims 18 and 21 and the long low-carbon steel product of new claim 24, and the claims depending therefrom.

The Examiner considers the present invention to be obvious over US 6,228,183 to Bangaru et al. Applicants respectfully disagree.

Bangaru relates to the production of ultra-high strength, weldable steel plates with superior thoughness and to linepipe manufactured therefrom.

The amounts of alloying elements disclosed in Bangaru by weight percent (*i.e.*, with respect to the total weight), whereas in the present claims, the percentages are given by weight but with respect to the iron content. Thus, the chemical composition of the steel of Bangaru is different from that of the present invention.

Another difference is that Bangaru is concerned with "flat-products" (slabs and plates), whereas the present invention relates to "long products" (billets and blooms; wires and rods). These are products that require two manufacturing routes that involve route-specific technology

and know-how. Particularly, a person skilled in the manufacture of flat products does not use the same recipes and approaches as a person skilled in the manufacture of long products.

Therefore, it is incorrect to assume that what has been disclosed in relation to flat products will be readily applicable to those skilled in the manufacture of long products.

Besides the difference in chemical composition between the steel of the present invention and that of Bangaru, it is important to note that Bangaru aims to provide a steel for the manufacture of flat products/slabs, in view of producing a welded linepipe.

Hence, the context of Bangaru is significantly different from the present invention since Bangaru is concerned with obtaining ultra-high strength and good weldability (as indicated by the Ceq). In this regard, the manufacture of the slabs simply involves hot rolling, and there is no (cold or hot) forging step involved in the manufacture.

In contrast, in the present invention, it is important to consider the steel composition, which must be suitable to endure major changes in shape without rupture, and at the same time exhibit good mechanical properties in the finished product, as well as machinabilty.

Bangaru does not contain any teaching or suggestion that would have pointed a person skilled in the art of long steel products manufacturing to the present invention. In particular, it is not obvious from Bangaru that the steel composition recited in claim 10, 14, 18, 21 and 24 is particularly adapted for forging, either by cold or hot processes, mechanical components with elevated characteristic, *i.e.* exhibiting a tensile strength at break greater than 800 MPa.

Nor does Bangaru disclose or suggest the processes of claims 18 and 21, which permits the manufacture of ready-to-use forged mechanical components with elevated characteristics, without additional heat treatment after forging.

For at least the above reasons, it is respectfully submitted that the present invention according to claims 10, 14, 18, 21 and 24 is patentable over Bangaru.

Moreover, claims 11-13, 15-17, and 19-20 depend from claims 10, 14, 18, or 21, and thus it is respectfully submitted that these claims are patentable for at least the same reasons as claims 10, 14, 18, and 21.

In view of the above, withdrawal of the rejection is respectfully requested.

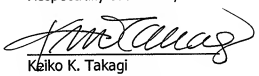
II. Conclusion

For the foregoing reasons, reconsideration and allowance of claims 10-24 is respectfully requested.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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